

# (12) UK Patent Application (19) GB (11) 2 198 066 (13) A

(43) Application published 8 Jun 1988

(21) Application No 8724898

(22) Date of filing 23 Oct 1987

(30) Priority data

(31) 8625456

(32) 23 Oct 1988

(33) GB

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B25B 23/08

(52) Domestic classification (Edition J):

B3N 2A2 2A5 7A

(56) Documents cited

GB 1507022 GB 1339949 GB 1233474

GB 0871948 GB 0757617 GB 0589025

GB 3710835

(58) Field of search

B3N

Selected US specifications from IPC sub-class

B25B

(54) Device for assisting the insertion of screws

(57) The device, for use with a screwdriver or electric drill 25, is a generally tubular member formed of two parts 4,5 resiliently held together, which parts define between them an elongated chamber which extends axially throughout the length of the member and tapers to an aperture at a first end thereof. The parts of the member hold a screw between them while the screw is turned by a screwdriver or drill and thereby screwed into place. The member has a lateral loading slot. A rubber collar 10 provides the resilient holding of the parts 4,5.

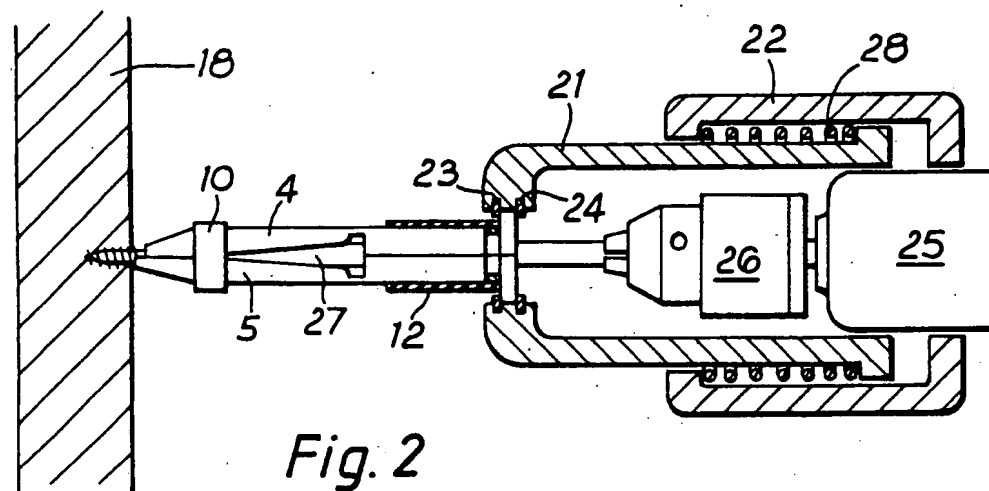
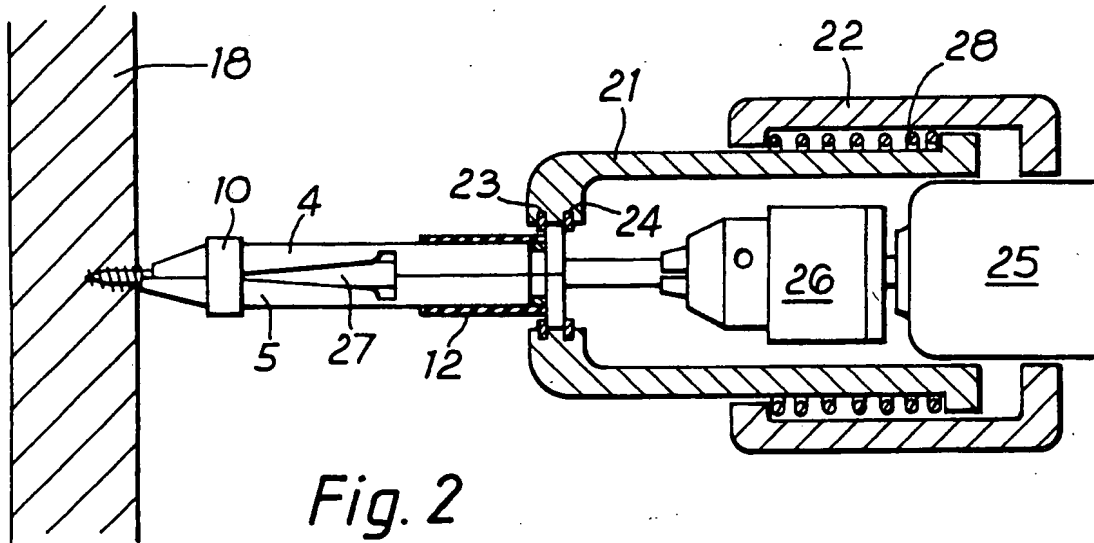
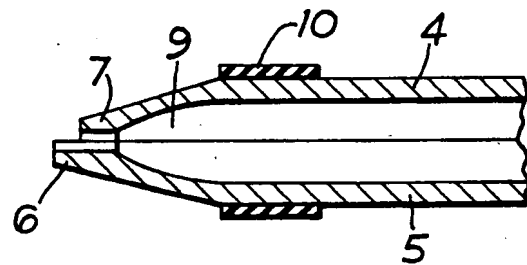
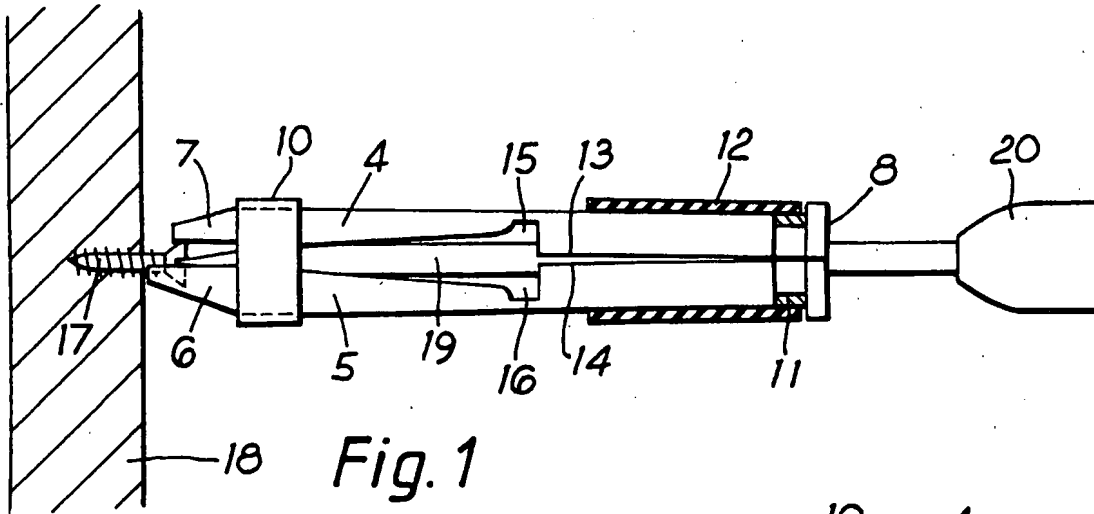


Fig. 2

The drawing(s) originally filed was (were) informal and the print here reproduced is taken from a later filed formal copy.



Device for Assisting Insertion of Screws

The present invention is a device which is of value in assisting the user of a screwdriver or electric drill in inserting wood screws or the like into an object or surface.

5       The device according to the invention comprises a generally tubular member formed of two parts resiliently held together, which parts define between them an elongated chamber which extends axially throughout the length of the tubular member and tapers to an aperture at a first end thereof. By means of the device, a  
10       screw may be held between the two parts of the tubular member while the screw is driven by a screwdriver or by a screwdriver bit and the screw will pass progressively out through the tapered chamber as it is tightened.

15       The two parts which together make up the generally tubular member may conveniently be mirror-image parts or even, in one form of the invention, identical parts. However, the parts may differ from each other if desired. For example, one of the parts may project beyond the end of the other one so as to provide a step to the aperture at one end of the generally tubular member.

20       Between them, the two parts of the generally tubular member define an elongated chamber which extends axially throughout the length of the member. The chamber should be of such diameter as to receive the shaft of a screwdriver which is long enough to extend throughout at least a major part of the length of the chamber and the chamber

should terminate in an aperture of at least that diameter at one end. However at its other end, the chamber is tapered towards an aperture through which the screw is applied to the surface. The taper may extend throughout a major part of the length of the chamber  
5 if desired but that is not necessary and it is sufficient if the taper is of the same order of size as the length of a screw, for example between 2 and 5 centimetres. The taper may be linear or curved.

The two parts of the generally tubular member are resiliently  
10 held together to enable them to move apart sufficiently to allow the screw to pass out through the forward aperture between the jaws thereof. For this purpose, they may be encircled at one or more points down their natural length by one or more sleeves, collars or clips of rubber or metal, for example a rubber sleeve and/or  
15 a spring circlip. Preferably the parts are resiliently held together at at least two points.

A screw to be affixed using the device according to the invention may, if desired, be inserted via the aperture at the rearward end of the tubular member. However, in a preferred form of  
20 the device, a lateral aperture is provided generally parallel to the elongated chamber, whereby the screw may be inserted laterally directly into the chamber. Preferably such an aperture is located nearer to the tapered end of the chamber. The lateral aperture may conveniently be formed at a line of join of the two parts of  
25 the generally tubular member, for example as a pair of aligned cut-outs from the adjacent edges of the two parts. The lateral aperture may usefully be generally screw-shaped, that is with a wider head-portion and a narrower shank-portion.

The device according to the invention may be made of metal, for example of steel, but it is also possible to make the two parts in a suitable synthetic plastics material, for example of polyvinyl chloride, nylon or polypropylene.

5        In one form of the invention, the device is adapted for use with a powered drill by the provision of means for securing the device to the body of the drill around the drill chuck. For example, using a drill of the compressed-air or of the electrically driven type, a screwdriver bit is fitted and the device is then  
10       used in a similar way to its use with a hand-held screwdriver.

The invention will now be further described with reference to the accompanying drawings, wherein:-

15       Fig. 1 is an elevation from the side of one embodiment of the device according to the invention, in use for affixing a screw;  
20       Fig. 2 is a corresponding view, partly in section and to a smaller scale, of a second embodiment of the device according to the invention; and  
      Fig. 3 is a detailed sectional view of the jaw-end of the devices of Figs. 1 and 2.

Referring firstly to Fig. 1, the illustrated device comprises two parts designated by the reference numerals 4 and 5, which parts are substantially mirror-images of each other except that the terminal jaw 6 of the part 5 projects beyond the end of the jaw 7 of the part 4. The two parts 4 and 5 define between them a generally tubular elongated chamber (see Fig. 3), which extends from a circular axial aperture 8 at one end of the device and, at its other end, tapers as shown at 9 in Fig. 3 towards the jaws 6, 7.

10 The parts 4, 5 are resiliently held together by a short rubber collar 10, a metal circlip 11 and a tubular rubber sleeve 12. At the point where the edges 13, 14 of the two parts 4, 5 abut each other, aligned cut-outs 15, 16 combine to form a loading aperture through which a screw may be inserted into the device.

15 When the device illustrated in Fig. 1 is to be used, a screw 17 is inserted via the loading aperture and the device is placed with the jaw 6 against, for example, a wall 18 into which the screw 17 is to be fixed. The shaft 19 of a suitably-sized screw-driver 20 is inserted into the device via the aperture 8 and engages the head of the screw 17 to screw it into the wall 18 in the usual manner. As the screw advances, the jaws 6, 7 move apart sufficiently to allow the screw to pass between them, while continuing to hold the screw until it is fully driven home. The relative movement of the jaws 6, 7 is more readily made possible by the fact that the jaw 7 does not extend into contact with the wall 18.

Referring to Fig 2, in which like numerals designate like parts, the illustrated device is provided with a pair of coaxial

metal sleeves 21, 22, retained upon the device by circlips 23, 24 and by means of which the device is mounted upon the body of a drill 25, which drives a chuck 26 into which a screwdriver bit 27 is fitted. In the illustrated form of the device, the sleeves  
5 21, 22 are urged apart by a compression spring 28 but other means for interengaging the two sleeves may be employed. Apart from the provision of a power drive to the screwdriver bit, the device of Fig. 2 functions in the same way as that of Fig. 1.

## CLAIMS

1. A device for assisting the insertion of screws and the like,  
comprising a generally tubular member formed of two parts resiliently  
held together, which parts define between them an elongated chamber  
5 which extends axially throughout the length of the tubular member  
and tapers to an aperture at a first end thereof.
2. A device as claimed in claim 1, wherein one of said parts projects  
beyond the end of the other said part at said first end thereof.
3. A device as claimed in either of the preceding claims, wherein  
10 the tapered length of said elongated chamber is between 2 and 5  
centimetres.
4. A device as claimed in any of the preceding claims, wherein the  
two parts of the generally tubular member are resiliently held  
together by one or more sleeves, collars or clips of rubber or metal.
- 15 5. A device as claimed in any of the preceding claims, having a  
lateral aperture which is generally parallel to said elongated chamber.
6. A device as claimed in claim 5, wherein said lateral aperture is  
located nearer to the tapered end of said chamber.
7. A device as claimed in claim 5 or claim 6 wherein said lateral  
20 aperture is formed at a line of join of said two parts of said  
generally tubular member.
8. A device as claimed in any of the preceding claims, having means  
for securing the device to the body of a powered drill around the  
drill chuck.
- 25 9. A device for assisting the insertion of screws and the like,  
substantially as hereinbefore described with reference to, and as  
illustrated in, Fig. 1 or Fig. 2 of the accompanying drawings.